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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,397	02/19/2004	Gregory S. Geschke	ISOT-022	6431

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EXAMINER
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BUI, HUNG S

ART UNIT	PAPER NUMBER
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2841

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/783,397	<b>Applicant(s)</b> GESCHKE ET AL.	
	<b>Examiner</b> Hung S. Bui	<b>Art Unit</b> 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02/19/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 5-7, 9-11, 19-21, are rejected under 35 U.S.C. 102(b) as being anticipated by Khosrowpour et al. [US 6,477,593].

Regarding claim 1, Khosrowpour et al. disclose an input/output transition board system for transferring data between an I/O board and a backplane board (figures 2-3), wherein each board defines an upper side considering a front rear and below side considering a front side, comprising:

- an I/O board (130) having at least one I/O connector (132C or 132D) and at least one front I/O connector (132a, 132b);
- a transition board (120) having at least one rear connector (122a, 122b) connectable to the at least one front I/O connector and at least one front connector (122c, 122d); and
- a backplane board (110) having at least one rear backplane connector (112a, 112b) connectable to the at least one front connector (figure 2).

Regarding claim 2, Khosrowpour et al. further disclose the transition board being distally spaced a distance from the backplane board when the at least one rear backplane connector is connected to the at least one front connector (figure 2).

Regarding claims 5-6, Khosrowpour et al. disclose wherein the transition board includes at least one electronic device (figure 2) and being active.

Regarding claim 7, Khosrowpour et al. disclose the backplane board having at least one connector/socket (140, figure 1).

Regarding claim 9, Khosrowpour et al. disclose wherein the at least one socket is in communication with the at least one rear backplane connector (figure 1-2).

Regarding claim 10, Khosrowpour et al. disclose wherein the rear backplane connector is comprised of a rear panel connector (figures 1-2).

Regarding claim 11, Khosrowpour et al. disclose the transition board being distally spaced a distance from the I/O board when the at least one front I/O connector is connected to the at least one rear connector (figure 2).

Regarding claim 19, Khosrowpour et al. disclose wherein the I/O board, the transition board and the backplane board are substantially parallel to one another (figures 1-3).

Regarding claim 20, Khosrowpour et al. disclose at least one first auxiliary connector connected to the backplane board and a first auxiliary board connectable to the auxiliary connector (figure 1-3).

Regarding claim 21, Khosrowpour et al. disclose at least one second auxiliary connector connected to the first auxiliary board and a second auxiliary board connectable to the second auxiliary connector (figures 1-3).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-4 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al.

Regarding claims 3-4 and 12-13, Khosrowpour et al. disclose the distance appears approximately 0.4 inches as shown in the figure 3. However, Khosrowpour et al. disclose the instant claimed invention except for the specific distance being at least about 0.4 to 1.0 inches.

The examiner takes notice that a distance between two boards as is well known in the art must be higher than any highest component to be mounted on the board between two boards, MPEP 2144.03.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make that the distance between two boards depends on the highest component intended to be used of the manufacture.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al. in view of Mitra et al. [US 5,707,242].

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Regarding claim 8, Khosrowpour et al. disclose the instant claimed invention except for the at least one socket being on a side opposite of the at least one rear backplane connector.

Mitra et al. disclose a circuit board system (figure 1) having at least one backplane board (3) including at least one rear connector (4) and at least one socket (8) being mounted opposite side of the backplane board (figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the socket mounting design at the opposite side of the backplane of Khosrowpour et al., as suggested by Mitra et al., for the purpose of providing an external connection.

6. Claims 14-15, 22-25, 27-31, 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al. in view of the Applicant's Admitted Prior Art as shown in figure 1 (AAPA, hereinafter).

Regarding claim 14, Khosrowpour et al. disclose the instant claimed invention except for the I/O board being attachable to an interior surface of an enclosure.

AAPA discloses an I/O board (20) being attachable to an interior surface of an enclosure (14, figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use mounting design of the AAPA with the I/O board of Khosrowpour et al., in order to seal the I/O board with the enclosure.

Regarding claim 15, Khosrowpour et al. disclose the instant claimed invention except for the at least one I/O connector being extendable through a corresponding opening within the enclosure.

AAPA further discloses at least one I/O connector (50) being extendable through a corresponding opening within the enclosure (figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the I/O connector design of the AAPA through the opening of the enclosure with the circuit board system of Khosrowpour et al. for the purpose of providing external connections.

Regarding claim 22, Khosrowpour et al. disclose an input/output transition board system for transferring data between an I/O board and a backplane board (figures 2-3), comprising:

- an I/O board (130) having at least one I/O connector (132C or 132D) and at least one first connector (132a, 132b);
- a transition board (120) having at least one second connector (122a, 122b) connectable to the at least one first connector and at least one third (122c, 122d), wherein the transition board is active;
- at least one electronic device connected to the transition board (figure 2);
- a backplane board (110) having at least one fourth connector (112a, 112b) connectable to the at least one third connector (figure 2), wherein

the backplane board has at least one socket (140) capable of receiving at least one card (figure 1);

- wherein the I/O board, the transition board and the backplane board are substantially parallel to one another (figures 1-3); and

Khosrowpour et al. disclose the instant claimed invention except for an enclosure surrounding the I/O board, the transition board and the backplane board, wherein the at least one I/O connector extends through a wall of the enclosure, wherein the I/O board is at least near an inner surface of the enclosure.

AAPA discloses an I/O board (20) being attachable to an interior surface of an enclosure (14, figure 1), wherein the I/O board has at least one I/O connector (50) being extendable through a corresponding opening within the enclosure (figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the I/O connector design of the AAPA through an opening of an enclosure with the circuit board system of Khosrowpour et al. in order to seal the I/O board and provide an external connection from the enclosure.

Regarding claim 23, Khosrowpour et al., as modified, disclose wherein the transition board is distally spaced a distance from the backplane board when the at least one fourth connector is connected to the at least one third connector (figure 2).

Regarding claims 24-25 and 30-31, Khosrowpour et al., disclose the distance appears approximately 0.4 inches as shown in the figure 3. However, Khosrowpour et al., as modified, disclose the instant claimed invention except for the specific distance being at least about 0.4 to 1.0 inches.



A distance between two boards is well known in the art and must be higher than any highest component to be mounted on the board between two boards.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to make that the distance between two boards depends on the highest component intended to be used of the manufacture.

Regarding claim 27, Khosrowpour et al. disclose wherein the at least one socket is in communication with the at least one fourth connector (figure 1-2).

Regarding claim 28, Khosrowpour et al. disclose wherein the fourth connector is comprised of a rear panel connector (figures 1-2).

Regarding claim 29, Khosrowpour et al. disclose the transition board being distally spaced a distance from the I/O board when the at least one front I/O connector is connected to the at least one rear connector (figure 2).

Regarding claim 35, Khosrowpour et al. disclose wherein the I/O board, the transition board and the backplane board are substantially parallel to one another (figures 1-3).

Regarding claim 36, Khosrowpour et al. disclose at least one first auxiliary connector connected to the backplane board and a first auxiliary board connectable to the auxiliary connector (figure 1-3).

Regarding claim 37, Khosrowpour et al. disclose at least one second auxiliary connector connected to the first auxiliary board and a second auxiliary board connectable to the second auxiliary connector (figures 1-3).

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Regarding claim 38, The AAPA further discloses wherein the enclosure is sealed (figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to seal the enclosure with the circuit board system of Khosrowpour et al., as suggested by AAPA, in order to prevent EMI and dissipating heat being generated from components in the system.

7. Claims 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al. in view of Przilas et al. [US 6,139,361].

Regarding claim 16, Khosrowpour et al. disclose the instant claimed invention except for the at least I/O connector being hermetic.

Przilas et al. disclose an electronic enclosure (100, figures 1-2) includes at least a hermetic connector to be used within the enclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the hermetic connector with the I/O connector of Khosrowpour et al., as suggested by Przilas et al., for the purpose of preventing leaking or sealing the I/O connector with the enclosure panel.

Regarding claim 18, Khosrowpour et al. disclose the instant claimed invention except for the circuit board system being enclosed in a spray cooling system.

Przilas et al. further disclose the electronic enclosure being designed for a spray cooling system (column 3, line 54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the enclosure design of Przilas et al. to hold the printed circuit board system of Khosrowpour et al., for the purpose of reducing electromagnetic emissions and dissipating heat from components.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al. in view of Damerow et al. [US 4,689,721].

Regarding claim 17, Khosrowpour et al. disclose the instant claimed invention except for the at least I/O connector including at least about 250 electrical conductors.

Damerow et al. disclose printed circuit board system (figure 1) using with a connector including at least about 250 electrical conductors (column 3, lines 60-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the connector design of Damerow et al. in the printed circuit board system of Khosrowpour et al., for the purpose of providing maximum high density interconnections through conductor paths of between two printed circuit boards.

9. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al., as modified, as applied to claim 22 above, and further in view of Mitra et al. [US 5,707,242].

Regarding claim 26, Khosrowpour et al., as modified, disclose the instant claimed invention except for the at least one socket being on a side opposite of the at least one rear backplane connector.

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Mitra et al. disclose a circuit board system (figure 1) having at least one backplane board (3) including at least one rear connector (4) and at least one socket (8) being mounted opposite side of the backplane board (figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the socket mounting design at the opposite side of the backplane of Khosrowpour et al., as modified, as suggested by Mitra et al., for the purpose of providing an external connection.

10. Claims 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al., as modified, as applied to claim 22 above, and further in view of Przilas et al. [US 6,139,361].

Regarding claim 32, Khosrowpour et al., as modified, disclose the instant claimed invention except for the at least I/O connector being hermetic.

Przilas et al. disclose an electronic enclosure (100, figures 1-2) includes at least a hermetic connector to be used within the enclosure.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the hermetic connector with the I/O connector of Khosrowpour et al., as modified, as suggested by Przilas et al., for the purpose of preventing leaking or sealing the I/O connector with the enclosure panel.

Regarding claim 34, Khosrowpour et al., as modified, disclose the instant claimed invention except for the circuit board system being enclosed in a spray cooling system.

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Przilas et al. further disclose the electronic enclosure being designed for a spray cooling system (column 3, line 54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the enclosure design of Przilas et al. to hold the printed circuit board system of Khosrowpour et al., as modified, for the purpose of reducing electromagnetic emissions and dissipating heat from components.

11. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khosrowpour et al., as modified, as applied to claim 22 above, and further in view of Damerow et al. [US 4,689,721].

Regarding claim 33, Khosrowpour et al., as modified, disclose the instant claimed invention except for the at least I/O connector including at least about 250 electrical conductors.

Damerow et al. disclose printed circuit board system (figure 1) using with a connector including at least about 250 electrical conductors (column 3, lines 60-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the connector design of Damerow et al. in the printed circuit board system of Khosrowpour et al., as modified, for the purpose of providing maximum high density interconnections through conductor paths of between two printed circuit boards.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Wong et al. [US 2005/0251035] disclose a modular portable ultrasound system;
- Gasbarro et al. [US 2005/0047079] disclose a computer system with configurable docking station;
- Evans [US 6,731,514] discloses a stackable module;
- Smith et al. [US 5,986,887] disclose a stacked circuit board assembly;
- Takarkin et al. [US 6,049,467] disclose a stackable high density;
- Jasper [US 6,109,929] discloses a high speed stackable memory system;
- Lettang [US 6,362,974] discloses a stacked processor construction;
- Noschese [US 5,575,686] discloses a stacked printed circuit boards; and
- Perino et al. [US 6,657,871] disclose a multiple channel module.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung S. Bui whose telephone number is (571) 272-2102. The examiner can normally be reached on Monday-Friday 8:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

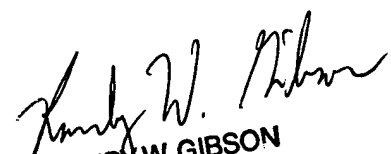
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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

3/3/06

**Hung Bui**

**Art Unit 2841**

  
RANDY W. GIBSON  
PRIMARY EXAMINER